

Appl. No. 10/563,929
Response to Office Action of September 21, 2007

PATENT
Docket No.: NL030818US1
Customer No. 000024737

REMARKS

Claims 1 and 9 have been amended. Claims 1-10 remain in the application. Support for the amendments to the claims is identified herein. No new matter has been added. Reconsideration and allowance of the application is respectfully requested.

Documents Submitted with 371 Application

The office action indicates that the "Documents submitted with 371 Applications" filed on 1/09/2007 are missing from the PTO's record. Applicant has been requested to resubmit these documents. Applicant notes the issue indicated by the Examiner and will resubmit the requested documents under separate cover.

Rejection under 35 U.S.C. §112

Claims 1-10 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The office action indicates that the "claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The calculation of the claimed "probabilities that the corresponding portions of the scaled three-dimensional output model (210-224) are visible in a two-dimensional view of the scaled three-dimensional output model, the determining being based on a projection of the three-dimensional input model (200-208) in a viewing direction" is not sufficiently showed. Applicant did mention such calculation in figures 3A-3C, but there is insufficient information of how it is quantitatively (emphasis added) done."

Applicant notes the issue identified in the office action and provides the following in response. By this amendment, the claims have been amended to more clearly point out what is meant by the phrase "probabilities that the corresponding portions of the scaled three-dimensional input model (200-208) are visible." In particular, the "probabilities of visibility" correspond to, and are characterized by, one of four types as

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disclosed in the specification on page 8, lines 26-31, and further as explained in the specification on page 8, lines 7-15. Accordingly, the phrase "probabilities of visibility" is a characterization of visibility by type as opposed to a quantitative probability (i.e., Type-I: *definitely will be* visible in one of the projections; II: *most probably will be* visible in one of the projections; III: *most probably will not be* visible in one of the projections; and IV: *definitely will not be* visible in one of the projections.) See also the specification on page 3, lines 21-29, in which the specification states, in part, "[o]n the basis of these properties of the display device in combination with an appropriate view, i.e., projection ..., the probability of visibility of portions in any of the possible view can easily be determined [i.e., assigning one of type I, type II, type III, or type IV to each portion]."

Accordingly, the §112, second paragraph, rejection is now believed overcome. Withdrawal of the rejection of claims 1-10 is respectfully requested.

Claims 1-10 were rejected under 35 U.S.C. § 112, first paragraph, as based on a disclosure which is not enabling. The office action indicates that "An autostereoscopic display device" (paragraph [0046]) is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. Applicants respectfully traverse this rejection for at least the following reasons. The undersigned was unable to find the terms "critical" or "essential" in the specification of the present application. However, claim 1 has been amended to include, in part, "being based on a viewing angle and depth-range capability of a display device". Support for the amendment to claim 1 can be found in the specification on at least page 3, lines 24-29.

Accordingly, the §112, first paragraph, rejection is now believed overcome. Withdrawal of the rejection of claims 1-10 is respectfully requested.

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Rejection under 35 U.S.C. §103

Claim 1 recites: a method of scaling a three-dimensional input model (200-208) into a scaled three-dimensional output model (210-224), the method comprising:

- determining for portions of the three-dimensional input model (200-208) respective probabilities that the corresponding portions of the scaled three-dimensional output model (210-224) are visible in a two-dimensional view of the scaled three-dimensional output model, the determining (a) being based on a projection of multiple projections of the three-dimensional input model (200-208) in a viewing direction and (b) being based on a viewing angle and depth-range capability of a display device, further wherein determining respective probabilities that the corresponding portions are visible includes assigning to elements stored in a z-buffer stack a designation of (i) type I for a portion that definitely will be visible in one of the projections, (ii) type II for a portion that most probably will be visible in one of the projections, (iii) type III for a portion that most probably will not be visible in one of the projections, and (iv) type IV for a portion that definitely will not be visible in one of the projections; and

- geometrically transforming portions of the three-dimensional input model into the respective portions of the scaled three-dimensional output model on basis of the respective probabilities, wherein geometrically transforming of the portions comprise one of clipping, translation, rotation, or deformation, wherein no depth-range of the display device is wasted in the scaling for eventually invisible portions of the scaled three-dimensional output model.

Support for the amendment to claim 1 (as well as for the amendment to claim 9) can be found in the specification on at least page 2, lines 26-28; page 3, lines 21-29; page 8, lines 7-15 and 26-31; and page 10, lines 24-25 of the application as originally filed.

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Claims 1-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Prior Art (paragraph [0008]) in view of LIM (6,690,373). With respect to claim 1, Applicant respectfully traverses this rejection on the grounds that these references are defective in establishing a prima facie case of obviousness.

As the PTO recognizes in MPEP § 2142:

... The examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness...

It is submitted that, in the present case, the rejection is not factually supported by a prima facie case of obviousness for the following, mutually exclusive, reasons.

1. Even When Combined, the References Do Not Teach the Claimed Subject Matter

The Prior Art (paragraph [0008]) and LIM patent cannot be applied to reject claim 1 under 35 U.S.C. § 103 which provides that:

A patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains ... (Emphasis added)

Thus, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, since neither Prior Art (paragraph [0008]) nor LIM teaches "... determining ... probabilities that ... portions are visible ... (a) being based on a projection of multiple projections ... in a viewing direction **and** (b) ... on a viewing angle and depth-range capability of a display device, further wherein determining ... includes assigning to elements stored in a z-buffer stack a designation of (i) type I ... , (ii) type II ... , (iii) type III ... , and (iv) type IV ... ; and geometrically transforming portions ... , wherein geometrically transforming ... comprise one of clipping, translation,

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rotation, or deformation, wherein no depth-range of the display device is wasted in the scaling for eventually invisible portions of the scaled three-dimensional output model" as is claimed in claim 1, it is impossible to render the subject matter of claim 1 as a whole obvious, and the explicit terms of the statute cannot be met.

Thus, for this mutually exclusive reason, the burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103 should be withdrawn.

2. The Combination of References is Improper

Assuming, arguendo, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why the Prior Art (paragraph [0008]) and LIM patent cannot be applied to reject claim 1 under 35 U.S.C. § 103.

§ 2142 of the MPEP also provides:

...the examiner must step backward in time and into the shoes worn by the hypothetical 'person of ordinary skill in the art' when the invention was unknown and just before it was made.....The examiner must put aside knowledge of the applicant's disclosure, refrain from using hindsight, and consider the subject matter claimed 'as a whole'.

Here, neither Prior Art (paragraph [0008]) nor LIM teaches, or even suggests, the desirability of the combination since neither teaches the specific "... determining ... probabilities that ... portions are visible ... (a) being based on a projection of multiple projections ... in a viewing direction **and** (b) ... on a viewing angle and depth-range capability of a display device, further wherein determining ... includes assigning to elements stored in a z-buffer stack a designation of (i) type I ... , (ii) type II ... , (iii) type III ... , and (iv) type IV ... ; and geometrically transforming portions ... , wherein geometrically transforming ... comprise one of clipping, translation, rotation, or deformation, wherein no depth-range of the display device is wasted in the scaling for eventually invisible portions of the scaled three-dimensional output model", as specified

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above and as claimed in claim 1.

Thus, it is clear that neither the prior art nor the patent provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. § 103 rejection.

In this context, the MPEP further provides at § 2143.01:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

In the above context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination.

In the present case, the combination presented in the office action lacks any showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 1. Therefore, for this mutually exclusive reason, the office action's burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. § 103 should be withdrawn.

Accordingly, claim 1 is allowable and an early formal notice thereof is requested. Dependent claims 2-7 depend from and further limit independent claim 1 and therefore are allowable as well. Accordingly, the 35 U.S.C. § 103(a) rejection thereof has now been overcome.

With respect to claim 9, it has been amended herein in a manner similar to the amendments to claim 1. Claim 9 is believed allowable over the prior art and LIM for at least the same reasons presented above with respect to the allowability of claim 1.

Accordingly, claim 9 is allowable and an early formal notice thereof is requested. Dependent claim 10 depends from and further limits independent claim 9 and therefore is allowable as well. Accordingly, the 35 U.S.C. § 103(a) rejection thereof has now been overcome. Withdrawal of the rejection is respectfully requested.

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Conclusion

Except as indicated herein, the claims were not amended in order to address issues of patentability and Applicants respectfully reserve all rights they may have under the Doctrine of Equivalents. Applicants furthermore reserve their right to reintroduce subject matter deleted herein at a later time during the prosecution of this application or a continuation application.

It is clear from all of the foregoing that independent claims 1 and 9 are in condition for allowance. Dependent claims 2-8 depend from allowable independent claim 1, and are thus also allowable. Dependent claim 10 depends from allowable independent claim 9 and is thus also allowable.

Amendments herein are fully supported by the original specification and drawings as discussed herein; therefore, no new matter is introduced. Issuance of an early formal notice of allowance of claims 1-10 is requested.

Respectfully submitted,

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